

Appl. No. 10/785,277  
Docket No. CM2601MC2  
Amdt. dated August 18, 2006  
Reply to Office Action mailed on May 18, 2006  
Customer No. 27752

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**REMARKS**

**Claim Status**

Claims 1, 3-8, and 10 are pending in the present application. No additional claims fee is believed to be due.

Claim 1 is amended by inserting the subject matter of Claims 2 and 9. Support for the amendment can be found in the claims as originally filed.

Claims 2 and 9 are canceled.

Claim 10 is amended to be dependent upon Claim 1.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

**Rejection Under 35 USC §102/103 Over Ohnishi et al. (U.S. Patent No. 6,524,508)**

Claims 1-4, 9, and 10 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ohnishi et al. (U.S. Patent No. 6,524,508) or in the alternative under 35 U.S.C. § 103(a) as obvious over Ohnishi et al.

Claim 1 is amended by inserting the subject matter of Claims 2 and 9 into Claim 1. The Applicants submit that Claim 1, as amended, is allowable under 35 U.S.C. § 102(e) over Ohnishi et al. because Ohnishi et al. fails to disclose all elements of Claim 1 of the present application. Ohnishi et al. fails to disclose an absorbent member comprising at least one region of chitosan wherein said region is positioned on said first and/or second surface of said absorbent member, wherein at least about 40% of at least one surface of said absorbent member is covered by said regions with particles of chitosan material.

In Ohnishi et al., the particles of chitosan are dispersed within the interior of the individual fibers in the form of fine particles. The fine particles of chitosan in Ohnishi et al. are "uniformly observed in the cross section of a fiber when observing the cross section of a fiber. Ohnishi et al., Column 4, Lines 25-30. Ohnishi et al., Column 4, Lines 28-30 states that "chitosan is uniformly dispersed into the interior of the fibers in the form

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of fine particles." Ohnishi et al. Column 3, Lines 4-16 states that chitosan-containing acrylic fibers are at the surface of the interior of the fibers. Particles of chitosan located within the cross section of individual fibers and at the surface of the interior of the fibers differ from particles of chitosan located on the absorbent member, as claimed in Claim 1 of the present application.

Even if Ohnishi et al. is incorrectly read to disclose particles of chitosan located on the absorbent member, the Applicants submit that Ohnishi et al. does not teach an absorbent member comprising at least one region of chitosan wherein said region is positioned on said first and/or second surface of said absorbent member, wherein at least about 40% of at least one surface of said absorbent member is covered by said regions with particles of chitosan material. In Ohnishi et al., the chitosan is penetrated into the fiber by immersing a yarn of water-swollen acrylic fibers in an aqueous acidic chitosan solution. Ohnishi et al. Column 7, Lines 1-7. As discussed above, Ohnishi discloses that this process results in chitosan being dispersed into the interior of the fibers or at the surface of the interior of the fibers. Such disclosure does not teach at least about 40% of at least one surface of said absorbent member is covered by said regions with particles of chitosan material.

Furthermore, Ohnishi et al. does not disclose an absorbent member having a first surface and an opposed second surface. Rather, Ohnishi et al. discloses individual fibers arranged to form a spun yarn, woven cloth and nonwoven fabric. Finally, Ohnishi et al. does not disclose the affinity to water of the fibers disclosed therein. Whether acrylic is characterized as hydrophilic or hydrophobic depends on the particular formulation of the polymer within the class of acrylics and the particular definitions chosen for defining what is hydrophilic or hydrophobic.

Ohnishi et al. also fails to disclose chitosan material wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Rather, the chitosan in Ohnishi et al. is dissolved in the presence of an acid, thereby to form a salt. Ohnishi et al., Column 7, Lines 32-33.

The Office Action rejects Claim 1 under 35 U.S.C. § 103(a) over Ohnishi et al. in the alternative. The Applicants submit that Claim 1, as amended, is allowable over Ohnishi et al. As discussed above, Ohnishi et al. fails to teach or suggest an absorbent member comprising at least one region of chitosan wherein said region is positioned on

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said first and/or second surface of said absorbent member, wherein at least about 40% of at least one surface of said absorbent member is covered by said regions with particles of chitosan material.

Ohnishi et al. also does not teach or suggest an absorbent member having a first surface and an opposed second surface. Rather, Ohnishi et al. discloses individual fibers arranged to form a spun yarn, woven cloth and nonwoven fabric. Finally, Ohnishi et al. does not teach or suggest the affinity to water of the fibers disclosed therein. Whether acrylic is characterized as hydrophilic or hydrophobic depends on the particular formulation of the polymer within the class of acrylics and the particular definitions chosen for defining what is hydrophilic or hydrophobic.

The Office Action states that the limitation of 3 grams of the chitosan material is soluble in 100 grams of water at 25°C and one atmosphere is presumed to be inherent based on Ohnishi et al. The Applicants respectfully traverse this statement. The Applicant submits that the Examiner has failed to provide rationale or evidence tending to show inherency, as required by the Manual of Patent Examining Procedure (MPEP) § 2112(IV) (8th Ed. Including May 2004 Revisions). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (emphasis added). Rather, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The Applicant submits that the Examiner has failed to provide rationale or evidence that supports the Examiner's statement that the matter set forth in Claim 1 of the present application is "presumed" to be inherent in Ohnishi et al. The portion of Ohnishi et al. to which the Office Action cites is related to an aqueous acidic solution of chitosan. In Ohnishi et al., the aqueous acidic solution is penetrated into the fibers of acrylic. The Applicants are unable to identify any portion of Ohnishi et al. in which the solubility of the chitosan after it is impregnated into the fibers of acrylic is reported or discussed. The

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rationale and evidence provided in the Office Action fail to indicate that the chitosan in Ohnishi et al. necessarily has a solubility of 3 grams in 100 grams of water at 25°C and one atmosphere. Similarly, the Office Action has failed to show that chitosan having a solubility of 3 grams in 100 grams of water at 25°C and one atmosphere, as specified by Claim 1 of the present application, necessarily flows from the teachings of Ohnishi et al.. Therefore, the Applicants submit that Claim 1 of the present application is not subject matter inherently disclosed in Ohnishi et al. and respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

Because Claims 3-8 and 10 depend from Claim 1, the Applicants submit that Claims 3-8 and 10 are also allowable over Ohnishi et al. The Applicants respectfully request that the rejection of Claims 3-8 and 10, under 35 U.S.C. § 102(e) and in the alternative under 35 U.S.C. § 103(a), be withdrawn.

Rejection Under 35 U.S.C. § 103(a) Over Kelkenberg in view of Kellenberger and Zenker and Sackmann et al.

Claims 1-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelkenberg (U.S. Patent No. 5,496,933) in view of Kellenberger and Zenker (U.S. Patent No. 4,699,823) and Sackmann et al. (U.S. Patent No. 5,635,569). Claim 1 is amended by inserting the subject matter of Claims 2 and 9 into Claim 1. The Applicants submit that Claim 1, as amended, is allowable under 35 U.S.C. § 103(a) over Kelkenberg in view of Kellenberger and Zenker and Sackmann et al. because the references when combined fail to teach or suggest each element of Claim 1 of the present application and the references when combined teach away from the subject matter of Claim 1.

The references, when combined, fail to teach or suggest an absorbent member comprising at least one region of chitosan wherein said region is positioned on said first and/or second surface of said absorbent member, wherein at least about 40% of at least one surface of said absorbent member is covered by said regions with particles of chitosan material. The Office Action of May 18, 2006, Page 6, Lines 11-13 cites Kellenberger and Zenker as teaching 100% of the back surface of the diaper in Kellenberger and Zenker as being covered by regions of superabsorbent particles. The Applicant submits that Kellenberger and Zenker does not teach or suggest at least about 40% of one surface of the absorbent member is covered by regions of chitosan material. Kellenberger and Zenker, Column 5, Lines 14-16 states that "particles of superabsorbent

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material 24 are distributed within the layer of absorbent material which comprises batt 10." Emphasis Added. Figures 2-6 illustrate the superabsorbent material as being in the absorbent material. Particles of superabsorbent distributed within the absorbent batt is not the same as particles covering a portion of the surface of the absorbent article. Furthermore, Kellenberger and Zenker teaches away from having particles of superabsorbent material on the surface of the absorbent article. Kellenberger and Zenker, Column 2, Lines 28-68 teaches that superabsorbent particles should not be on the surface of the absorbent member because gel blocking can impede fluid flow and that it is undesirable to have gelled material potentially come into contact with the wearer because of potential discomfort to the wearer.

The references, when combined, also fail to teach or suggest chitosan wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Furthermore, the references, when combined, fail to teach or suggest a substantially hydrophilic absorbent member comprising at least one region located on said absorbent member with particles of a substantially water-soluble chitosan salt having a particle size distribution with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$ . Kelkenberg, Kellenberger and Zenker, and Sackmann, when combined, also fail to teach or suggest a substantially hydrophilic absorbent member comprising at least one region located on said absorbent member with particles of a substantially water-soluble chitosan salt having a particle size distribution with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$ . Kelkenberg, Kellenberger and Zenker, and Sackmann et al. do not teach or suggest that the disclosures regarding the size of super absorbent polymers are relevant to the behavior of particles of chitosan.

The references, when combined, also teach away from Claim 1 of the present application. Kelkenberg, Column 2, Lines 12-13 teaches that the chitosan salts are preferably crosslinked. Kelkenberg, Column 3, Lines 47-48 also teaches that swellability, which is indicative of absorptive capacity, can be improved by after-crosslinking. Kelkenberg discloses 21 examples. Tables 1-4 report absorption values for Examples 8-27. Examples 8-21 describe chitosan lactic acid salts crosslinked with glutaraldehyde. Kelkenberg, Column 6, Lines 60-61. Examples 22-27 describe chitosan lactic acid salts crosslinked with sorbitol diglycidyl ether. Examples 1-3 describe chitosan HCl Salt, Chitosan Formic Acid Salt, and Chitosan Glyolic Acid Salt, respectively. The Applicants are unable to identify any portion of Kelkenberg reporting the absorption value for the

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compositions of Examples 1-3. By not reporting absorption values for Examples 1-3, Kelkenberg implicitly teaches away from water soluble chitosan salt as disclosed in Examples 1-3 in light of the disclosure of the absorption values for the crosslinked compositions and the conspicuous election not to report absorption values for the water soluble chitosan salts.

Adding Kellenberger and Zenker and Sackmann to Kelkenberg does not overcome the deficiencies of Kelkenberg. Kellenberger and Zenker and Sackmann also do not teach water soluble chitosan salt. Rather, Kellenberger and Zenker and Sackmann teach crosslinked super absorbent polymers. Kellenberger and Zenker teaches super absorbent polymers having a particular size and is devoid of any reference to chitosan. Similarly, Sackmann et al. teaches that smaller particles of super absorbent polymers reach an equilibrium swelling state more rapidly than larger particles but fails to teach or suggest anything with respect to chitosan. The super absorbent polymers of Kellenberger and Zenker and Sackmann et al. are not chitosan, as claimed in the present application.

Based on the above, the Applicants submit that Claim 1, is patentable over Kelkenberg in view of Kellenberger and Zenker and Sackmann. The Applicants respectfully request that the rejection of Claim 1, under 35 U.S.C. § 103(a), be withdrawn.

Because Claims 3-8 and 10 depend upon Claim 1, the Applicants submit that Claims 3-8 and 10 are also allowable over Kelkenberg in view of Kellenberger and Zenker and Sackmann. The Applicants respectfully request that the rejection of Claims 3-8 and 10, under 35 U.S.C. § 103(a), be withdrawn.

#### Response to Double Patenting Rejections

Claims 1-10 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,833,487 in view of Kellenberger and Zenker and Sackmann et al. The Applicants submit that Claim 1 is patentable over claims 1-15 of U.S. Patent No. 6,833,487 in view of Kellenberger and Zenker and Sackmann et al. because the references, when combined, fail to teach or suggest a substantially hydrophilic absorbent member comprising at least one region located on said absorbent member with particles of a substantially water-soluble chitosan salt having a particle size distribution with a mean diameter D<sub>v,0.9</sub> of

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not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Claims 1-15 of U.S. Patent No. 6,833,487 fail to teach or suggest chitosan with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Kellenberger and Zenker teaches super absorbent polymers having a particular size but is devoid of any reference to chitosan. Similarly, Sackmann et al. teaches that smaller particles of super absorbent polymers reach an equilibrium swelling state more rapidly than larger particles but fails to teach or suggest anything with respect to chitosan. The super absorbent polymers of Kellenberger and Zenker and Sackmann et al. are not chitosan, as claimed in the present application. Neither Kellenberger and Zenker or Sackmann et al. teach or suggest that the disclosures regarding the size of super absorbent polymers are relevant to the behavior of particles of chitosan. As discussed above, Kellenberger and Zenker also teaches away from providing superabsorbents on the surface of the absorbent member, indicating that superabsorbents should be in the interior of the absorbent member to prevent problems associated with gelling. The Applicants submit that Claim 1 is patentable over claims 1-15 of U.S. Patent No. 6,833,487 in view of Kellenberger and Zenker and Sackmann et al. The Applicants respectfully request that the double patenting rejection of Claim 1 be withdrawn. Because Claims 3-8 and 10 depend upon Claim 1, the Applicants submit that Claims 3-8 and 10 are also allowable over claims 1-15 of U.S. Patent No. 6,833,487 in view of Kellenberger and Zenker and Sackmann et al. The Applicants respectfully request that the double patenting rejection of Claims 3-8 and 10 be withdrawn.

Claims 1-10 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,867,287 in view of Kellenberger and Zenker and Sackmann et al. The Applicants submit that Claim 1 is patentable over claims 1-24 of U.S. Patent No. 6,833,287 in view of Kellenberger and Zenker and Sackmann et al. because the references, when combined, fail to teach or suggest a substantially hydrophilic absorbent member comprising at least one region located on said absorbent member with particles of a substantially water-soluble chitosan salt having a particle size distribution with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Claims 1-24 of U.S. Patent No. 6,867,287 fail to teach or suggest chitosan with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100

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grams of water at 25°C and one atmosphere. Kellenberger and Zenker teaches super absorbent polymers having a particular size but is devoid of any reference to chitosan. Similarly, Sackmann et al. teaches that smaller particles of super absorbent polymers reach an equilibrium swelling state more rapidly than larger particles but fails to suggest or teach anything with respect to chitosan. The super absorbent polymers of Kellenberger and Zenker and Sackmann et al. are not chitosan, as claimed in the present application. Neither Kellenberger and Zenker or Sackmann et al. teach or suggest that the disclosures regarding the size of super absorbent polymers are relevant to the behavior of particles of chitosan. As discussed above, Kellenberger and Zenker also teaches away from providing superabsorbents on the surface of the absorbent member, indicating that superabsorbents should be in the interior of the absorbent member to prevent problems associated with gelling. The Applicants submit that Claim 1 is patentable over claims 1-24 of U.S. Patent No. 6,833,287 in view of Kellenberger and Zenker and Sackmann. The Applicants respectfully request that the double patenting rejection of Claim 1 be withdrawn. Because Claims 3-8 and 10 depend upon Claim 1, the Applicants submit that Claims 3-8 and 10 are also allowable over claims 1-24 of U.S. Patent No. 6,833,287 in view of Kellenberger and Zenker and Sackmann et al. The Applicants respectfully request that the double patenting rejection of Claims 3-8 and 10 be withdrawn.

Claims 1-10 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,887,564 in view of Kellenberger and Zenker and Sackmann et al. The Applicants submit that Claim 1 is patentable over claims 1-21 of U.S. Patent No. 6,887,564 in view of Kellenberger and Zenker and Sackmann et al. because the references, when combined, fail to teach or suggest a substantially hydrophilic absorbent member comprising at least one region located on said absorbent member with particles of a substantially water-soluble chitosan salt having a particle size distribution with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Claims 1-21 of U.S. Patent No. 6,887,564 fail to teach or suggest chitosan with a mean diameter  $D(v,0.9)$  of not more than about 300  $\mu\text{m}$  wherein at least 3 grams of said chitosan material is soluble in 100 grams of water at 25°C and one atmosphere. Kellenberger and Zenker teaches super absorbent polymers having a particular size and is devoid of any reference to chitosan. Similarly, Sackmann et al. teaches that smaller particles of super absorbent polymers reach an equilibrium swelling state more rapidly than larger particles but fails to teach or

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suggest anything with respect to chitosan. The super absorbent polymers of Kellenberger and Zenker and Sackmann et al. are not chitosan, as claimed in the present application. Neither Kellenberger and Zenker or Sackmann et al. teach or suggest that the disclosures regarding the size of super absorbent polymers are relevant to the behavior of particles of chitosan. As discussed above, Kellenberger and Zenker also teaches away from providing superabsorbents on the surface of the absorbent member, indicating that superabsorbents should be in the interior of the absorbent member to prevent problems associated with gelling. The Applicants submit that Claim 1 is patentable over claims 1-21 of U.S. Patent No. 6,887,564 in view of Kellenberger and Zenker and Sackmann et al. The Applicants respectfully request that the double patenting rejection of Claim 1 be withdrawn. Because Claims 3-8 and 10 depend upon Claim 1, the Applicants submit Claims 3-8 and 10 are also allowable over claims 1-21 of U.S. Patent No. 6,887,564 in view of Kellenberger and Zenker and Sackmann. The Applicants respectfully request that the double patenting rejection of Claims 3-8 and 10 be withdrawn.

Applicants agree to submit a Terminal Disclaimer to obviate a provisional double patenting rejection over Application 10/785,464 upon notice of allowable subject matter if necessary.

Applicants agree to submit a Terminal Disclaimer to obviate a provisional double patenting rejection over Application 11/021,634 upon notice of allowable subject matter if necessary.

#### Conclusion

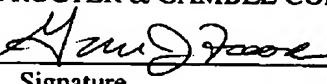
In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejections under 35 U.S.C. § 102, 35 U.S.C. § 103, and the double patenting rejections. Early and favorable action in the case is respectfully requested.

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application and allowance of Claims 1, 3-8, and 10 are respectfully requested.

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Respectfully submitted,

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